

IN THE CLAIMS:

Please cancel Claims 5, 21-23, and 30 without prejudice to or disclaimer of the recited subject matter.

Please amend Claims 1, 3, 10, 12, and 19 and add new Claim 31 as follows.

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C.

1. (Currently Amended) An augmented reality presentation apparatus for superimposing a virtual object in a real space, characterized by comprising:

objective viewpoint augmented reality presentation means for superimposing the virtual object viewed from a first viewpoint position, which differs from a player's viewpoint position, in the real space viewed from the first viewpoint position,

wherein said objective viewpoint augmented reality presentation means includes

first video sensing means for sensing a video of the real space viewed from the first viewpoint position;

first video generation means for generating a video of the virtual object viewed from the first viewpoint position;

first video composition means for composing an augmented reality video viewed from the first viewpoint position on the basis of the videos of the real space and the virtual object viewed from the first viewpoint position, and

objective viewpoint video display means for displaying the augmented reality video obtained from said first video composition means on a screen of a predetermined display apparatus;

wherein said apparatus further comprises:

b.

~~augmented reality presentation means for superimposing the virtual object viewed from the player's viewpoint position in the real space viewed from the player's viewpoint position;~~

~~player's viewpoint augmented reality presentation means for superimposing the virtual object viewed from the player's viewpoint position in the real space viewed from the player's viewpoint position;~~

~~wherein said player's viewpoint augmented reality presentation means includes second video sensing means for sensing a video of the real space viewed from the player's viewpoint position;~~

~~player's viewpoint position acquiring means for acquiring information indicating the player's viewpoint position;~~

~~second video generation means for generating a video of the virtual object viewed from the player's viewpoint position using the information indicating the player's viewpoint position;~~

~~second video composition means for composing an augmented reality video viewed from the player's viewpoint position on the basis of the videos of the real space and the virtual object viewed from the player's viewpoint position; and~~

~~display means for displaying to the player the augmented reality video viewed from the player's viewpoint position on a screen of a player's display apparatus independently from said predetermined display apparatus.~~

2. (Cancelled)

3. (Currently Amended) The apparatus according to claim 1, characterized in that said player's viewpoint augmented reality presentation means further comprises:

the second video generation means for generating a video of the virtual object viewed from said player's viewpoint position; and

the display means for displaying to the player the video of the virtual object viewed from said player's viewpoint position on a display surface through which the player can visually see the real space.

b. 4. (Original) The apparatus according to claim 1, characterized by further comprising information generation means for generating information that pertains to rendering of the virtual object, and in that said first video generation means and said second video generation means generate videos of the virtual object using the information that pertains to rendering of the virtual object.

5. (Cancelled)

6. (Original) The apparatus according to claim 1, characterized in that parameters of said first video sensing means are known, and said first video generation means generates the video of the virtual object viewed from said first viewpoint position in accordance with the known parameters.

7. (Original) The apparatus according to claim 1, characterized in that some of parameters of said first video sensing means are variable,

said apparatus further comprises measurement means for measuring changes of the parameters, and

said first video generation means generates the video of the virtual object viewed from said first viewpoint position in accordance with the parameters measured by said measurement means.

8. (Original) The apparatus according to claim 7, characterized in that the parameters of said first video sensing means measured by said measurement means include at least one of a viewpoint position/posture, and zoom ratio.

8. (Original) The apparatus according to claim 1, characterized in that when a plurality of first video sensing means equivalent to said first video sensing means are present,

said apparatus further comprises selection means for receiving a plurality of videos of the real space from said first viewpoint position from the plurality of first video sensing means, and outputting a video of the real space viewed from said first viewpoint position input from one selected first video sensing means to said first video composition means, and

said first video composition means generates a video of the virtual object viewed from said first viewpoint position using parameters of the first video sensing means selected by said selection means.

10. (Currently Amended) An augmented reality presentation method for superimposing a virtual object in a real space, characterized by comprising:

an objective viewpoint augmented reality presentation step of superimposing the virtual object viewed from a first viewpoint position, which differs from a player's viewpoint position, in the real space viewed from the first viewpoint position;

wherein said objective viewpoint augmented reality presentation step includes a first video sensing step of sensing a video of the real space viewed from the first viewpoint position;

a first video generation step of generating a video of the virtual object viewed from the first viewpoint position;

b. a first video composition step of composing an augmented reality video viewed from the first viewpoint position on the basis of the videos of the real space and the virtual object viewed from the first viewpoint position, and

an objective viewpoint video display step of displaying the augmented reality video obtained from said first video composition step on a screen of a predetermined display apparatus;

wherein said method further comprises:

~~an augmented reality presentation step of superimposing the virtual object viewed from the player's viewpoint position in the real space viewed from the player's viewpoint position;~~

a player's viewpoint augmented reality presentation step of superimposing the virtual object viewed from the player's viewpoint position in the real space viewed from the player's viewpoint position;

wherein said player's viewpoint augmented reality presentation step includes a second video sensing step of sensing a video of the real space viewed from the player's viewpoint position;

a player's viewpoint position acquiring step of acquiring information indicating the player's viewpoint position;

a second video generation step of generating a video of the virtual object viewed from the player's viewpoint position using the information indicating the player's viewpoint position;

a second video composition step of composing an augmented reality video viewed from the player's viewpoint position on the basis of the videos of the real space and the virtual object viewed from the player's viewpoint position; and

a display step for displaying to the player the augmented reality video viewed from the player's viewpoint position on a screen of a player's display apparatus independently from said predetermined display apparatus.

11. (Cancelled)

12. (Currently Amended) The method according to claim 10, characterized in that the player's viewpoint augmented reality presentation step further comprises:

the second video generation step of generating a video of the virtual object viewed from said player's viewpoint position; and

the display step of displaying to the player the video of the virtual object viewed from said player's viewpoint position on a display surface through which the player can visually see the real space.

13. (Original) The method according to claim 10, characterized by further comprising the information generation step of generating information that pertains to rendering of the virtual object, and

in that in said first video generation step and said second video generation step, videos of the virtual object are generated using the information that pertains to rendering of the virtual object.

14. (Original) The method according to claim 13, characterized in that said information generation step includes the step of generating information of an outer appearance of the virtual object and information of a position/posture of the virtual object as the information that pertains to rendering of the virtual object.

15. (Original) The method according to claim 10, characterized in that parameters of means for sensing said first viewpoint video are known, and

said first video generation step includes the step of generating the video of the virtual object viewed from said first viewpoint position in accordance with the known parameters.

16. (Original) The method according to claim 10, characterized in that some of parameters of means for sensing a video viewed from said first viewpoint position are variable,

said method further comprises the measurement step of measuring changes of the parameters, and

said first video generation step includes the step of generating the video of the virtual object viewed from said first viewpoint position in accordance with the parameters measured in the measurement step.

B. 17. (Original) The method according to claim 16, characterized in that the parameters of the means for sensing a video viewed from said first viewpoint position measured in the measurement step include at least one of a viewpoint position/posture, and zoom ratio.

18. (Original) The method according to claim 10, characterized in that when a plurality of means for sensing a video viewed from said first viewpoint position are present,

said method further comprises the selection step of receiving a plurality of videos of the real space viewed from a first viewpoint position from the plurality of means for sensing a video viewed from said first viewpoint position, and outputting the video of the real space viewed from a first viewpoint position input from one selected means for



sensing a video of said first viewpoint position to means for compositing a first viewpoint video, and

said first video composition step includes the step of generating a video of the virtual object viewed from said first viewpoint position using parameters of the means for sensing a video viewed from a first viewpoint position selected in the selection step.

19. (Currently Amended) A storage medium storing a program code for superimposing a virtual object in a real space when said program code is loaded by a computer, characterized by comprising:

a program code of an objective viewpoint augmented reality presentation step of superimposing the virtual object viewed from a first viewpoint position, which differs from a player's viewpoint position, in the real space viewed from the first viewpoint position,

wherein said program code of the objective viewpoint augmented reality presentation step includes

a program code of a first video sensing step of sensing a video of the real space viewed from the first viewpoint position;

a program code of a first video generation step of generating a video of the virtual object viewed from the first viewpoint position;

a program code of a first video composition step of composing an augmented reality video viewed from the first viewpoint position on the basis of the videos of the real space and the virtual object viewed from the first viewpoint position; and

a program code for an objective viewpoint video display step of displaying the augmented reality video obtained from the first video composition means on a screen of a predetermined display apparatus,

wherein said storage medium further stores:

~~a program code for an augmented reality presentation step of superimposing the virtual object viewed from the player's viewpoint position in the real space viewed from the player's viewpoint position;~~

a program code for a player's viewpoint augmented reality presentation step of superimposing the virtual object viewed from the player's viewpoint position in the real space viewed from the player's viewpoint position;

wherein said program code for the player's viewpoint augmented reality presentation step includes

a program code for a second video sensing step of sensing a video of the real space viewed from the player's viewpoint position;

a program code for a player's viewpoint position acquiring step of acquiring information indicating the player's viewpoint position;

a program code for a second video generation step of generating a video of the virtual object viewed from the player's viewpoint position using the information indicating the player's viewpoint position;

a program code for a second video composition step of composing an augmented reality video viewed from the player's viewpoint position on the basis of the videos of the real space and the virtual object viewed from the player's viewpoint position;  
and

a program code for a display step of displaying to the player the augmented reality video viewed from the player's viewpoint position on a screen of a player's display apparatus independently from said predetermined display apparatus.

20.-23. (Cancelled)

24. (Original) The medium according to claim 19, characterized in that parameters of means for sensing said first viewpoint video are known, and the program code of said first video generation step includes the step of generating the video of the virtual object viewed from said first viewpoint position in accordance with the known parameters.

25. (Original) The medium according to claim 19, characterized in that some of parameters of means for sensing a video viewed from said first viewpoint position are variable, the program code of said medium further comprises the measurement step of measuring changes of the parameters, and

the program code of said first video generation step includes the step of generating the video of the virtual object viewed from said first viewpoint position in accordance with the parameters measured in the measurement step.

26. (Original) The medium according to claim 25, characterized in that the parameters of the means for sensing a video viewed from said first viewpoint position

measured in the measurement step include at least one of a viewpoint position/posture, and zoom ratio.

27. (Original) The medium according to claim 19, characterized in that when a plurality of means for sensing a video viewed from said first viewpoint position are present,

said medium further comprises a program code of the selection step of receiving a plurality of videos of the real space viewed from a first viewpoint position from the plurality of means for sensing a video viewed from said first viewpoint position, and outputting the video of the real space viewed from a first viewpoint position input from one selected means for sensing a video of said first viewpoint position to means for compositing a first viewpoint video, and

b- the program code of said first video composition step includes the step of generating a video of the virtual object viewed from said first viewpoint position using parameters of the means for sensing a video viewed from a first viewpoint position selected in the selection step.

28. (Original) The apparatus according to claim 1, characterized by further comprising printing means,

in that said first video composition means outputs the augmented reality video to said printing means.

said printing means grabs one frame of the received video and prints out to the paper as a still image.

29. (Original) The method according to claim 10, characterized by further comprising printing step,

in that in said first video composition step the augmented reality video is output to means for printing,

in said printing step one frame of the received video is grabbed and printed out to the paper as a still image

30. (Cancelled)

31. (New) An augmented reality presentation apparatus for superimposing a virtual object in a real space, characterized by comprising:

an objective viewpoint augmented reality presentation unit adapted to superimpose the virtual object viewed from a first viewpoint position, which differs from a player's viewpoint position, in the real space viewed from the first viewpoint position;

wherein the objective viewpoint augmented reality presentation unit includes;

a first video sensing unit adapted to sense a video of the real space viewed from the first viewpoint position;

a first video generation unit adapted to generate a video of the virtual object viewed from the first viewpoint position;

a first video composition unit adapted to compose augmented reality video viewed from the first viewpoint on the basis of the videos of the real space and the virtual object viewed from the first viewpoint position; and

an objective viewpoint video display unit adapted to display the augmented reality video obtained from the first video composition unit;

the apparatus further comprises;

a player's viewpoint augmented reality presentation unit adapted to superimpose the virtual object viewed from the player's viewpoint position in the real space viewed from the player's viewpoint position;

wherein the player's viewpoint augmented reality presentation unit includes:

a second video sensing unit adapted to sense a video of the real space viewed from the player's viewpoint position;

b. a second video generation unit adapted to generate a video of the virtual object viewed from the player's viewpoint position using the information indicating the player's viewpoint position;

a second video composition unit adapted to compose an augmented reality video viewed from the player's viewpoint position on the basis of the videos of the real space and the virtual object from the player's viewpoint position; and

a display unit adapted to display to the player the augmented reality video viewed from the player's viewpoint position.